

Student's Information

Metamorphosis means a transformation, a marked change in appearance or condition. Think of a caterpillar changing, or metamorphosing into a butterfly. Or, think of a snowball. To make a snowball you scoop up some fresh, soft, fluffy snow. Then the heat and pressure from your hands changes it into a hard, icy snowball.

Metamorphic rock is rock which has been changed by heat and/or pressure, often over a long period of time. The original rock, sometimes called the parent rock, may have been an **igneous rock**, a **sedimentary rock** or even an-

other metamorphic rock. The same rock will look different, depending on the amount of heat and pressure that it experiences. For example, the sedimentary rock called shale will become slate if it is exposed to low temperatures and pressures. However if the shale is exposed to higher temperatures and pressures, it will become another kind of metamorphic rock called **schist**.

The metamorphic rock found at Hanging Rock State Park is **quartzite**. Quartzite is a type of rock which formed from **sandstone**, a sedimentary rock. Sandstone is made of **quartz sand** and is rela-

tively brittle. Over millions of years, the sandstone became deeply buried. The heat and pressure from within the earth's crust caused the sandstone to change, or metamorphose, into quartzite. Most of the outcrops and large rock formations that you will see at Hanging Rock are quartzite.

But what actually happened to the sandstone to change it into quartzite? The sandstone did not melt. At higher temperatures, the sandstone **recrystallized** – the quartz crystals in the rock enlarged and grew together. This resulted in a whole new texture and also made the quartzite much stronger than the original sandstone.

In this activity, you will use a kind of clay called ceramic greenware. Clay is basically mud, just like the sediments that make up many sedimentary rocks. The clay will be heated in a special oven called a kiln. After it is heated for a while, it will recrystallize into bisque, a kind of pottery. The bisque will have a different texture and appearance than the original greenware. This process is similar to sandstone changing into quartzite.

Rock Cycle

